

CLIMATOLOGICAL DATA FOR MAY, 1913.

DISTRICT NO. 4, THE LAKE REGION.

Prof. HENRY J. COX, District Editor.

GENERAL SUMMARY.

The weather in the Lake region during the month of May, 1913, was lacking in features of unusual meteorological interest. The mean temperature during the month was below the normal in practically all sections, the greatest departure being 4.1° at Northfield, Vt., at which station temperatures below the seasonal average occurred on each day of the month after the 6th. The greatest positive departures occurred over the eastern portion of the Lower Michigan Peninsula, but did not exceed 2° at any station.

The total precipitation was also deficient in amount, except in western sections, and that portion of the district bordering on western Lake Erie. In Wisconsin the greatest departures were recorded, and an excess of 4 inches was reported at several stations in the lower Fox River Valley.

The percentage of sunshine was considerably above the normal in New York State, but close to the average, or a little below, in other sections. Severe and widespread storms were infrequent, although the usual number of thunderstorms occurred in all portions of the district.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

Portions of States.	Mean temperature.	Departure from normal.	Mean daily range.	Mean precipitation.	Departure from normal.	Greatest precipitation in 24 hours.	Mean snowfall.	Number of days—			Prevailing wind direction.
								With 0.01 inch or more.	Clear.	Partly cloudy.	
Minnesota.....	47.4	-2.0	18.1	4.37	+0.43	1.70	T. 11	7	15	9	ne.
Wisconsin.....	52.3	-0.7	16.6	5.85	+2.49	3.03	T. 12	9	10	10	ne.
Illinois.....	57.6	+1.1	15.1	4.38	+1.01	1.83	o 11	11	9	11	ne.
Indiana.....	59.1	-0.1	21.0	4.35	+0.40	2.75	o 10	12	9	10	sw.
Upper Michigan	48.2	-0.4	17.9	2.56	-0.64	1.12	o 12	9	12	7	nw.
Lower Michigan	54.9	-0.3	19.2	2.87	-0.49	2.60	T. 8	12	10	9	sw.
Ohio.....	59.0	-0.7	16.5	3.97	+0.53	3.57	o 12	14	9	8	sw.
Pennsylvania.....	55.8	-1.5	20.7	2.68	-0.75	0.91	o 14	9	16	6	w.
New York.....	54.0	-1.4	17.7	2.81	-0.42	2.50	T. 9	13	10	8	nw.
Vermont.....	51.6	-2.9	20.4	3.19	+0.14	1.15	T. 11	9	9	13	s.

TEMPERATURE.

The only pronounced warm weather of the month was that which occurred during the first six days, and this was felt chiefly in central and eastern sections. In New York State maximum temperatures of over 90° were reported at a few stations during this period, and in some instances these readings were equal to the highest May records for their respective localities, although the hot

weather occurred not later than the 5th in any section. In other portions of the district the maximum temperatures for the month were well over 80° , and were generally recorded during the first week. In Minnesota and upper Michigan high temperatures were again experienced on the 31st.

From the 7th until the close of the month daily readings below the normal prevailed with persistent regularity in all sections. In northern New York and Vermont the deficiency in temperature was quite marked, and minimums as low as 18° were reported in the former State on the 12th and 15th at Old Forge and Gabriels, respectively. In Ohio the 11th was one of the coldest May days on record, a minimum of 24° being observed at Medina. At two stations the absolute minimum for the month was 1° colder than any previous May record and at four stations the low record was equaled.

Frosts.—Heavy to killing frosts occurred quite generally over the district on the 10th and 11th in connection with the cold period in Ohio referred to above, and killing frosts were again recorded over the Upper Michigan Peninsula on the 25th and 26th. The greatest damage was reported from portions of Michigan and Ohio. In the fruit region of the Lower Michigan Peninsula the frost of May 10 caused considerable harm to strawberries and peaches, but later fruit was not seriously injured. In Ohio also the cold weather of the 10th and 11th did a great amount of damage to all tender vegetation, especially to peach buds. As a result of these frosts, the fruit crop in that State is estimated as being only 52 per cent of the average. In some localities of New York light frost was reported as late as the 26th, but in the fruit sections killing frost did not occur later than the 11th, at which time no serious injury occurred.

PRECIPITATION.

During the first half of the month the precipitation was light in all sections, most stations in the eastern portion of the district reporting less than 0.10 inch during this period. In the Lake Champlain Valley of New York there was no rain of consequence from about April 12 to May 15, and in Vermont agricultural operations were somewhat retarded by the droughty conditions. Rains were frequent, however, over the entire district during the latter half of the month. In the western portion of Ohio the precipitation was unusually heavy and greatly interfered with farm work, corn planting especially being badly delayed. At Toledo 3.57 inches fell on the 26th-27th, and heavy rains were also recorded along the western shore of Lake Michigan on the 20th and the 26th, and in the western Lake Superior region on the 29th. At Duluth, Minn.,

the rainfall on this date was 1.16 inches and at Superior, Wis., 3.03 inches. Much damage was done by water in both cities, basements being flooded and railroad tracks washed away.

Snow.—The snowfall during the month was confined to the extreme northern portions of the district, and in only one instance did the total amount exceed 1 inch, 6 inches being reported from the Upper Peninsula Experiment Station at Chatham, Mich.

ICE.

No ice in any quantity was observed at the various lake stations during the month except at Duluth, Minn., concerning which the official at that station reports as follows:

At the beginning of the month and until the 17th, there was pack ice in the lake, which at times extended nearly to Two Harbors, Minn. On the 3d, 15 steamers were caught in the ice outside the harbor, and vessel operations were also impeded on the 6th, 9th, and 15th. On the last-mentioned date much of the ice outside was forced by high north-east winds into the harbor, stopping the ferries and small craft. After the 15th the ice gradually diminished in quantity, and on the 31st there was none of consequence remaining.

MISCELLANEOUS.

Sleet.—Wires, iron structures, and sidewalks at Duluth, Minn., were covered with a coating of sleet during the night of the 14th-15th.

Seiches.—Pronounced fluctuations in the level of the waters of Lake Michigan, amounting to from 1 to 2 feet, occurred at Grand Haven, Mich., between 10 and 11 a. m. on the 14th. These were accompanied by marked changes in barometric pressure. No damage to shipping was reported.

MAY LAKE LEVELS.

The following data are from the report of the United States Lake Survey:

	Lake Superior.	Lakes Michigan, Huron.	Lake Erie.	Lake Ontario.
Above tide water at New York.....	Feet. 602.13	Feet. 581.05	Feet. 573.98	Feet. 247.97
Above or below:				
Stage of April, 1913.....	+0.47	+0.25	-0.02	+0.11
Stage of May, 1912.....	+0.23	+1.08	+1.39	+1.15
Mean stage of May last 10 years.....	+0.11	+0.33	+1.22	+1.14
Highest recorded stage.....	-0.92	-2.47	-0.44	-0.98
Lowest recorded stage.....	+1.31	+1.49	+2.50	+3.01
Probable change during June.....	+0.30	+0.30	+0.20	+0.15

TABLE 1.—Climatological data for May, 1913. District No. 4, Lake Region.

Stations.	Counties.	Elevation, feet.	Length of record, years	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of days 0.01 inch or more.	Number of partly cloudy days.	Number of cloudy days.			
<i>Minnesota.</i>																				
Cloquet.....	Carlton.....	800	2	47.2	-2.4	88	27	20	9†	50	5.71	+ 1.35	1.55	0	10	4	17	10	e. ne.	State Forest Exp. Station.
Duluth.....	St. Louis.....	1,133	42	46.2	-2.4	81	31	29	9	34	4.82	+ 1.35	1.16	T.	14	4	12	15	U. S. Weather Bureau.	
Floodwood.....	do.....	1,257	6																M. H. Schussler.	
Grand Marais.....	Cook.....																		T. J. Joynes.	
Stephens Mine.....	St. Louis.....	1,500	6	49.2	-	86	27	20	9	43	4.20	-	1.70	T.	7	14	11	6	w. ne.	Oliver Iron Mining Co.
Two Harbors.....	Lake.....	614	19	46.1	-1.4	78	30†	27	7†	39	3.03	-0.51	1.50	0	9	2	21	8	n. ne.	G. W. Watts.
Virginia.....	St. Louis.....	1,434	19	48.4	-2.3	86	27	22	9	43	4.11	+ 0.45	1.32	0	13	9	15	7	n. nw.	Oliver Iron Mining Co.
<i>Wisconsin.</i>																				
Appleton.....	Outagamie.....	795	12	56.2	+ 0.9	86	1	30	10	36	7.63	+ 3.99	1.59	0	14	13	11	7	se.	William O. Thiede.
Ashland.....	Ashland.....	615	22	48.5	-2.0	85	1	20	9	44	4.59	+ 1.02	1.20	0	10	12	1	18	ne.	Agr. Exp. Station.
Bayfield.....	Bayfield.....	635	4	49.0	-	82	31	30	9†	36	4.50	+ 1.05	0		12 ^b	1 ^b	10 ^b	n.	Rev. Sabinus Mollitor.	
Cecil.....	Shawano.....	804	15	54.0	-0.1	85	1	27	10	30	5.10	+ 2.08	2.04	0	7	10	18	8	se.	Louis W. Schmidt.
Cornucopia.....	Bayfield.....	640	1	46.4	-	79	31	26	10†	33	4.13	-	0.84	0	13	5	16	10	ne.	Reed Fruit Co.
Crandon.....	Forest.....	1,060	18	50.9	-1.3	80	28	25	10†	36	4.25	+ 1.75	1.20	0	10	11	10	10	se.	Frank Shoemaker.
Florence.....	Fond du lac.....	1,293	22	50.4 ^a	-0.8	83 ^c	2	9	37 ^c	37 ^c	3.74	0.00	1.02	T.	8	17 ^a	3 ^a	10 ^a	sw.	Fred S. Evans.
Fond du lac.....	Fond du lac.....	800	22	55.6	-0.6	86	1	25	10	43	7.83	+ 4.47	2.17	0	14	21	2	8	s.	Edward A. Seeley.
Grand River Locks.....	Marquette.....	770	17	56.6	-	83	1	31	10	38	6.22	+ 1.39	1.20	0	12	18	5	11	s.	Jerry Parkinson.
Green Bay.....	Brown.....	617	27	53.4	-1.1	82	1	31	10	33	5.49	+ 1.92	1.22	0	16	4	10	17	s.	U. S. Weather Bureau.
High Falls.....	Marinette.....	1,125	1	52.2	-	86	1†	21	10	46	4.55	-	0.83	0	12	13	7	11	se.	No. Hydro-Elec. Pow. Co.
Iron River.....	Bayfield.....	1,096	4	49.9	-	90	27	19	9	47	5.67	-	1.47	0	10	17	7	7	ne.	Winfeld E. Tripp.
Keweenaw.....	Keweenaw.....	590	4	49.0	-	70	28	28	10	29	4.34	-	0.93	0	11	14	9	9	s.	Capt. N. Craige.
Manitowoc.....	Manitowoc.....	616	62	51.0	-1.2	79	3	28	10	35	6.07	+ 3.28	1.08	0	12	7	11	13	ne.	Miss Johanna Lups.
Menasha.....	Winnebago.....	764	16								7.16	+ 4.08	2.08	0	12	19	5	7	se.	Geo. T. Allanson.
Menomonee Falls.....	Waupkesha.....	842	4	55.2	-	83	1†	26	10†	37	6.26	-	1.23	0	12	17	4	10	nw.	Arthur H. Christman.
Milwaukee.....	Milwaukee.....	681	43	54.2	+ 0.6	83	2	34	10	35	5.65	+ 2.23	1.12	0	12	13	6	12	ne.	U. S. Weather Bureau.
New London.....	Outagamie.....	762	17	54.8	-1.3	84	1†	28	10	40	6.88	+ 2.65	1.50	0	14	10	10	11	se.	August H. Pape.
Oconto.....	Oconto.....	590	22	53.6	-0.6	86	1	28	10	38	4.83	+ 1.19	0.97	0	12	20	5	6	e.	Harry M. Lord.
Oshkosh.....	Winnebago.....	744	24	55.2 ^b	-1.4	85 ^c	1	29 ^b	10	39 ^c	5.68	+ 1.81	1.44	0	9	16 ^b	7 ^b	6 ^b	sw.	Evan Vincent.
Pine River.....	Waushara.....	900	18	55.4	-1.3	86	1	27	10	40	8.83	+ 4.77	2.04	0	15	4	18	9	nw.	George H. Carpenter.
Plum Island.....	Door.....	588	5	47.4	-	60	1†	28	10	31	3.57	-	0.88	0	9	12	7	12	s.	William Robinson.
Plymouth.....	Sheboygan.....	843	3	53.6	-	83	1	27	10	32	6.01	-	1.39	0	16	10	10	11	nw.	Paul P. Felleppa.
Port Washington.....	Ozaukee.....	713	20	51.8	-1.0	80	1	29	10	35	5.54	+ 1.79	1.20	0	12	9	10	12	ne.	Richard C. Kann.
Racine.....	Racine.....	633	16	55.4	+ 0.4	84	1	31	11	39	5.63	+ 2.58	1.15	0	15	16	6	9	ne.	Daniel Davis.
Ripon.....	Fond du Lac.....	1,031	3	56.0	-	83	1	30	10	30	7.17	-	1.53	0	14	10	12	9	nw.	Ripon College.
Shobogyan.....	Sheboygan.....	831	14	52.7	+ 0.1	83	1	35	10†	36	7.04	+ 3.40	1.62	0	12	11	9	11	nw.	Louis C. Meyer.
Sturgeon Bay.....	Door.....	600	14	48.6	-0.4	68	12	25	10	29	5.19	-	1.15	0	15	8	16	7	ne.	Adam N. Dier.
Superior.....	Douglas.....	701	4	45.0	-	82	31	32	10†	41	7.51	-	3.03	0	14	9	13	9	ne.	Edward B. Banks.
Waupaca.....	Waupaca.....	857	18	55.2	-1.2	86	2	25	10	47	8.53	+ 4.29	1.96	0	14	8	10	13	se.	James H. Flagg.
<i>Illinois.</i>																				
Chicago.....	Cook.....	823	43	57.6	+ 1.1	85	2	38	10	29	4.38	+ 1.01	1.83	0	11	11	9	11	ne.	U. S. Weather Bureau.
<i>Indiana.</i>																				
Auburn.....	Dekalb.....	874	17	57.6	-0.9	85	2	27	10	44	3.68	-0.03	2.30	0	7	12	7	12	sw.	Mrs. Josie B. Kuhlman.
Berne.....	Adams.....	849	4	60.9	-	86	2	28	11	38	3.20	-	1.52	0	8	12	11	8	nw.	Henry M. Reusser.
Fort Wayne.....	Allen.....	856	17	59.9	-0.3	84	2	33	10	33	3.77	+ 0.09	1.98	0	9	12	11	8	sw.	U. S. Weather Bureau.
Hammond.....	Lake.....	598	22	59.0	+ 0.9	86	2	31	11	43	5.17	+ 1.13	2.00	0	10	5	13	13	se.	Carson W. Whitney.
Howe.....	Lagrange.....	886	8	59.0	-	89	2	28	11	40	4.21	-	1.50	0	13	17	0	14	s.	A. A. Wade.
Notre Dame.....	St. Joseph.....	712	2	58.1	-	83	2	31	10	31	4.80	-	2.75	0	11	13	15	3	s.	U. S. Weather Bureau.
Whiting.....	Lake.....	606	4	59.4	-	86	2	33	11	35	5.59	-	2.31	0	11	15	7	9	ne.	D. H. Boyd.
<i>Michigan—Upper Peninsula.</i>																				
Baraga.....	Baraga.....	623	11								1.30	-2.39	0.30	0	8	10	0	21	w.	D., S. S. & A. Ry.
Bergland.....	Ontonagon.....	1,300	3	62.4	-	91	1	20	9	51	3.05	-	0.95	0	7	14	4	13	n.	Frank McMonigal.
Calumet.....	Houghton.....	1,246	25	46.4	+ 0.5	74	1	26	15†	36	2.95	-0.39	0.80	0	12	13	8	10	e.	E. S. Grierson.
Chatham.....	Alger.....	875	12	45.1	-2.1	57	1	19	11	65	2.31	-0.77	1.00	6.0	5	11	4	16	n.	Upper Peninsula Exp. Sta.
Deer Park.....	Luce.....	610	12	45.8	+ 0.1	85	1	27	26	43	1.02	-2.45	0.40	0	4	13	5	13	w.	Mrs. Sarah E. McGaw.
Defour.....	Chippewa.....	558	12																sw.	Ervin Vincent.
Eagle Harbor.....	Keweenaw.....	622	14	44.9	-0.8	78	1	28	8	35						17	0	14	s.	T. J. Bennets.
Escanaba.....	Delta.....	612	40	47.4	-2.6	67	28	29	9	26	3.28	-0.14	0.95	0	12	7	10	14	s.	U. S. Weather Bureau.
Ewen.....	Ontonagon.....	1,147	12	49.4	-0.9	83	1	20	9	40	2.97	-0.57	0.83	0	12	10	5	16	sw.	W. B. Hatfield.
Grand Marais.....	Alger.....	610	12	45.1	-0.2	83	1	29	10	32	2.23	-0.50	0.90	0	8	19	5	7	w.	Mrs. Lena Truedell.
Green.....	Ontonagon.....	622	2																sw.	T. A. Green.
Houghton.....	Houghton.....	668	12	46.5	-2.7	81	1	25	33	2.88	+ 0.59	0.82	T.	13	6	12	13	e.	U. S. Weather Bureau.	
Humboldt.....	Marquette.....	1,536	16	52.6	+ 5.3	84	1	23	9†	39	2.57	-0.06	1.12	0	6	14	0	17	w.	D., S. S. & A. Ry.
Iron Mountain.....	Dickinson.....	1,111	12	52.8	+ 0.9	85	1	26	12	39	3.16	-0.22	0.78	T.	9	7	18	6	nw.	Chapin Mining Co.
Iron River.....	Iron.....	1,504	16																sw.	Victor D. Laing.
Ironwood.....	Gogebic.....	1,520	10	50.0	+ 0.3	81	27	24	9	35	3.00									

TABLE 1.—*Climatological data for May, 1913. District No. 4—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.							Sky.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of partly cloudy days.	Number of cloudy days.				
<i>Lower Peninsula—Con.</i>																					
Ann Arbor.	Washtenaw.	930	33	57.0	- 0.6	83	2	30	10	36	5.34	+ 1.69	1.81	0	10	7	14	10	sw.	University of Michigan.	
Arbela.	Tuscola.	728	17	56.1	- 0.8	82	4	23	10	35	1.66	- 2.43	1.05	0	4	2	19	10	w.	Wm. Atkin.	
Armadada.	Macomb.	24	54.8	- 0.5	83	2	24	10	39	3.87	+ 0.12	1.34	0	10	9	15	7	sw.	R. O. Gould.		
Battle Creek.	Calhoun.	822	29	57.3	- 2.2	85	2	29	10	39	3.26	+ 0.24	0.92	0	11	13	4	14	sw.	Elmer E. Sager.	
Bay City.	Bay.	593	17	57.6	+ 0.3	87	2	30	10	37	0.58	- 3.26	0.24	0	6	13	9	9	sw.	Pere Marquette R. R.	
Benzonia.	Benzie.	832	16	52.2	0	83	2	23	10	31	3.06	- 0.52	1.20	0	11	10	12	9	sw.	Wallace Nutting.	
Big Rapids.	Mecosta.	906	17	56.7	+ 1.3	84	2	27	10	40	2.14	- 0.82	0.85	0	7	12	8	11	sw.	Supt. Waterworks.	
Blissfield.	Lenawee.	657	1	59.4	—	85	2	30	10	40	5.90	—	1.42	0	11	4	19	8	ne.	Harry Watson.	
Bloomingdale.	Van Buren.																		John M. Haven.		
Cadillac.	Wexford.	1,293	4	52.8	—	78	1†	24	10	34	2.16	—	0.61	0	14	15	4	12	sw.	Cadillac Water & Light Co.	
Cassopolis.	Cass.	903	12	33	49.4	- 2.6	82	3	26	10	30	2.07	- 0.59	0.95	0	5	11	15	5	nw.	Michigan Central R. R.
Charlevoix.	Charlevoix.	610	33	57.3	—	85	2	26	10	36	4.72	—	2.60	0	7	17	3	11	w.	Pere Marquette R. R.	
Charlotte.	Eaton.	9	57.3	—	85	2	26	10	36	2.47	- 0.69	0.80	T.	7	1*	5	5	sw.	City of Charlotte.		
Cheboygan.	Cheboygan.	611	23	50.4*	- 0.2	88*	1†	26*	10	44	—	—	—	0	10	15	11	5	nw.	E. A. Bouchard.	
Clinton.	Clinton.	830	23	58.8	+ 0.7	85	2	27	10	46	4.69	+ 0.56	1.24	0	9	11	7	13	sw.	David Woodward.	
Coldwater.	Branch.	984	16	59.4	+ 0.5	84	2	29	10	37	3.54	- 0.77	0.80	0	8	7	18	6	nw.	L. S. & M. S. R. R.	
Croton.	Newaygo.	655	5	56.6	—	80	2†	30	11	35	1.79	—	0.52	0	9	7	14	10	sw.	Gr. Rap. Musk. Power Co.	
Detroit.	Wayne.	730	42	57.4	- 0.5	84	4	33	9	31	4.57	+ 1.30	1.47	0	9	13	5	12	nw.	U. S. Weather Bureau.	
Durand.	Shiawassee.	799	5	56.8	—	84	1†	24	7	42	—	—	—	0	—	15	4	12	sw.	Chief train dispatcher.	
East Tawas.	Iosco.	590	16	50.6	- 1.6	75	2†	26	9	28	1.32	- 1.60	0.60	0	5	21	10	0	e.	Detroit & Mackinaw Ry.	
Eloise.	Wayne.	640	16	57.8	+ 0.5	85	5	30	10	37	6.08	+ 3.41	1.96	0	11	14	9	4	s.	John Gilmore.	
Five Channels.	Iosco.	600	23	53.4	—	86	2	24	10	39	1.14	—	0.32	0	8	18	9	4	sw.	Aubale Electric Co.	
Flint.	Genesee.	730	24	56.3	+ 0.4	85	2	29	10	36	3.16	+ 0.62	1.50	0	12	14	3	14	sw.	William L. Fisher.	
Frankfort.	Benzie.	589	9	48.0	—	67	29	30	11	22	3.20	—	1.20	0	4	15	0	16	s.	Geo. Morency.	
Ganges.	Allegan.	665	4	54.1*	—	79*	2	27	10	32	2.96	—	1.13	0	10	13	5	12	sw.	H. H. Hutchins.	
Gaylor.	Otsego.	1,367	13	50.5	- 0.8	84	1†	18	8	38	1.86	- 0.95	0.79	0	7	20	0	11	sw.	Michigan Central R. R.	
Gladwin.	Gladwin.	794	17	56.5	+ 1.6	89	2	26	10	47	2.60	- 0.76	1.40	0	2	22	4	5	w.	George R. Smith.	
Grand Haven.	Ottawa.	628	24	52.5	- 2.3	76	2	29	10	28	2.13	- 1.21	0.57	0	9	13	7	11	w.	U. S. Weather Bureau.	
Grand Rapids.	Kent.	707	24	57.4	- 1.6	83	2	30	10	33	1.76	- 1.53	0.45	0	9	10	8	13	w.	Do.	
Grape.	Monroe.	625	23	58.6	+ 0.7	87	2	29	10	39	5.58	+ 0.28	1.13	0	10	14	3	14	sw.	Joseph W. Morris.	
Grass Lake.	Jackson.	989	7	57.7	—	84	4	27	10	32	4.99	—	1.25	0	7	14	3	12	w.	Menzo Conklin.	
Grayling.	Crawford.	1,147	23	51.0	- 3.1	89	28	22	7	45	2.05	- 0.92	0.67	0	7	13	6	12	sw.	S. N. Insley.	
Greenville.	Montcalm.	802	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	sw.	Michigan Pickle Co.	
Harbor Beach.	Huron.	635	25	53.0	+ 1.2	88	2	30	11	35	0.87	- 2.16	0.55	0	5	19	11	1	ne.	Pere Marquette R. R.	
Harrison.	Clare.	1,159	20	55.0	+ 1.3	85	2	24	10	37	1.09	- 1.94	0.46	0	4	20	10	1	s.	Do.	
Harrisville.	Aleona.	616	29	50.2	- 0.2	87	2	26	10	37	1.63	- 1.70	0.64	0	11	18	5	8	ne.	D. W. Mitchell.	
Hart.	Oceana.	698	21	55.4	+ 0.7	82	2	27	10	38	3.44	- 0.11	0.95	0	12	11	8	8	sw.	Pere Marquette R. R.	
Hayes.	Huron.	620	23	56.2*	+ 1.6	85b	2†	28b	26	39b	1.64	- 1.31	0.75	0	6	13b	12b	4b	sw.	C. F. Leipprandt.	
Highland.	Oakland.	1,006	21	—	—	—	—	—	—	—	3.97	+ 0.39	1.65	0	7	11	7	11	sw.	A. D. DeGarmo.	
Hillsdale.	Hillsdale.	1,150	16	58.2	+ 0.8	84	2	28	10	36	3.74	- 0.54	1.20	0	9	11	13	7	sw.	C. L. Herron.	
Holland.	Ottawa.	610	7	55.2	—	83	2	27	10	32	2.46	—	0.43	0	12	11	11	9	sw.	City of Holland.	
Houghton Lake.	Roscommon.	0	52.2b	—	83b	3	27b	10	33b	1.64	—	0.75	0	7	11b	8b	10b	sw.	James H. Ostrander.		
Howell.	Livingston.	924	21	57.0*	+ 0.5	82	2†	27*	10	34	3.47	+ 1.74	1.50	0	9	13b	4*	13*	sw.	Frank Sharp.	
Ivan.	Kalkaska.	24	52.6	- 0.4	84	1	22	11	39	2.50	- 0.66	1.00	0	7	8	18	5	nw.	O. L. Giddings.		
Jackson.	Jackson.	927	16	58.4	- 1.0	85	2	28	10	37	4.22	+ 0.61	1.28	0	12	14	9	8	n.	City of Jackson.	
Jeddo.	St. Clair.	667	24	54.4	- 0.3	83	2	27	10	38	2.53	- 0.74	0.93	0	7	11	7	11	sw.	William Bice.	
Johannesburg.	Otsego.	0	51.1b	—	84b	2	21b	10	39b	1.57	—	1.15	T.	5	9b	16b	4b	nw.	Axel Becker.		
Kalamazoo.	Kalamazoo.	955	37	56.0	- 2.2	80	2	27	10	32	3.18	- 0.94	1.15	0	7	10	10	11	w.	Kalamazoo Asylum.	
Lansing (Agri. Col.).	Ingham.	863	49	56.2	- 0.9	83	2	27	10	35	2.21	- 1.37	0.57	0	11	14	7	13	sw.	U. S. Weather Bureau.	
Lansing (Capitol).	do.	881	26	57.1	- 0.2	84	2	28	10	34	2.32	- 1.33	0.58	0	11	12	6	13	nw.	State Board of Health.	
Lapeer.	Lapeer.	827	14	56.4	+ 0.3	86	4	28	10	33	3.12	- 0.23	1.00	0	7	6	22	3	sw.	Michigan Home.	
Ludington.	Mason.	637	15	50.0	- 2.6	73	2	30	10	27	2.93	+ 0.36	0.82	0	13	10	10	11	s.	U. S. Weather Bureau.	
Luther.	Lake.	1,028	3	53.8	—	83	2	16	10	42	2.53	—	0.63	0	11	11	9	11	sw.	John W. Nicholsen.	
Mackinaw.	Cheboygan.	592	22	46.3	- 2.8	82	3	28	7	42	—	—	—	0	—	—	—	—	sw.	G. R. & I. Ry.	
Mancelona.	Antrim.	1,121	17	52.4	- 0.2	88	1	16	7	43	2.21	+ 0.14	0.80	0	4	14	0	17	w.	Do.	
Manistee.	Manistee.	600	16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	sw.	Pere Marquette R. R.	
Marshall.	Calhoun.	896	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	sw.	E. B. Sturt.	
Midland.	Midland.	604	14	57.8	- 0.5	87	2	27	10	36	1.40	- 1.68	1.00	0	3	10	11	10	se.	Pere Marquette R. R.	
Morenci.	Lenawee.	811	6	58.0	—	84	2	29	11	39	5.05	—	1.37	0	11	11	11	9	sw.	George J. Tripp.	
Mount Clements.	Macomb.	615	13	56.8	+ 1.0	87	2	30	10	44	3.02	+ 0.10	1.10	0	5	16	1	14	e.	Waterworks.	
Mount Pleasant.	Isabella.	826	14	53.8	- 2.3	80	26	27	12	35	0.83	- 1.81	0.52	0	4	15	10	6	w.	Pere Marquette R. R.	
Muskegon.	Muskegon.	587	17	55.0	- 0.7	77	2†	29	23	35	3.97	+ 0.90	2.00	0	3	10	16	5	sw.	G. R. & I. Ry.	
Old Mission.	Grand Traverse.	588	19	51.1	- 2.1	84	2	27	10	36	2.13	+ 1.12	0.95	0	12	10	19	2	n.	E. O. Ladd.	
Olivet.	Eaton.	934	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	sw.	G. A. Knapp.	
Omer.	Arenac.	616	14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	sw.	Detroit & Mackinaw Ry.	
Onaway.	Presque Isle.	826	10	52.4	- 1.0	85	3	25	10	36	1.90	- 1.17	0.80	0	4	16	2	13	s.	Do.	
Owasso.	Shiawassee.	731	16	59.4	+ 0.1	86	3	27	10	37	2.54	- 0.46	0.50	0	13	11	16	4	nw.	Owosso Sugar Co.	
Potsekey.	Emmett.	660	23	49.2	- 1.3	85	2	28	11	31	2.91	+ 0.05	1.25	0	7	18	3	10	w.	G. R. & I. Ry.	
Plymouth.	Wayne.	725	16	58.6	+ 1.1	87	2	28	11	49	4.30	+ 1.22	1.90	0	5	24	4	3	s.	Pere Marquette R. R.	
Pontiac.	Oakland.	935	24	57.0	+ 0.3	84	2	27	10	34	3.52	- 0.01	1.15	0	9	12	6	13	sw.	Fred W. Shaw.	
Port Austin.	Huron.	618	16	52.4	- 1.4	84	2	25	10	34	4.08	- 1.98	0.52	0	3	12	9	10	n.	Pere Marquette R. R.	
Port Huron.	St. Clair.	639	14	58.4	+ 0.5	82	3	21	10	36	2.89	- 0.35	1.22	0	12	8	16	7	ne.	U. S. Weather Bureau.	
Reed City.	Osceola.	1,0																			

TABLE 1.—Climatological data for May, 1913. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total rainfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
Ohio—Continued.																					
Cleveland (2).....	Cuyahoga.....	754	16	58.2	— 0.3	87	5	35	11†	30	2.91	— 0.02	1.11	0	10	15	8	8	nw.	Rev. F. L. Odenbach, S. J.	
Conneaut.....	Ashland.....	675	3	56.0	— 2.0	86	4	35	10	34	2.49	— 0.85	0	12	6	9	16	16	sw.	E. L. Ransom.	
Findlay.....	Hancock.....	776	24	59.6	— 0.8	88	2†	26	11	44	4.15	+ 0.39	2.15	0	11	19	5	9	se.	Dr. E. A. Moser.	
Fremont.....	Sandusky.....	628	11	60.4	— 0.2	87	2†	30	11	37	6.40	+ 2.59	2.40	0	8	17	5	9	sw.	E. Stanley Thomas.	
Hedges.....	Paulding.....	725	19	60.2	+ 0.1	88	25	27	11	39	4.13	+ 1.10	1.40	0	8	17	9	5	sw.	Charles Stutzman.	
Hillhouse.....	Lake.....	997	20	55.8	— 1.3	85	4†	25	11	36	3.06	— 1.31	0.91	0	12	16	10	5	nw.	J. W. Doneaster.	
Hiram.....	Portage.....	1,260	33	58.0*	— 0.1	84*	5	29*	10	33	2.85	— 1.05	0.75	0	8	18*	12*	5*	nw.	Prof. G. H. Colton.	
Hudson.....	Summit.....	1,123	52	59.4*	— 0.3	90*	2	29*	10†	44*	3.31	+ 0.13	0.0	0	9	18*	5b	6b	sw.	Dr. W. I. Chamberlain.	
Lima.....	Allen.....	875	14	59.8	— 0.6	84	2†	28	11	41	3.41	— 0.15	1.87	0	6	16	3	12	sw.	Miss Ollie De Long.	
Medina.....	Medina.....	944	25	58.2	— 1.5	87	2	24	11	44	2.83	— 0.63	0.62	0	12	19	5	7	w.	F. W. Clark.	
Montpelier.....	Williams.....	880	21	59.9	— 1.1	86	2	29	11	41	4.56	+ 0.26	2.46	0	8	20	4	7	n.	G. L. Laser.	
Napoleon.....	Henry.....	680	26	60.2	+ 0.1	88	16	29	10	45	4.19	+ 0.72	2.54	0	9	18	1	12	w.	A. C. Senter.	
New Bremen.....	Auglaize.....	1,038	20	60.6	— 0.9	85	2	28	11	35	2.26	— 0.65	0.90	0	6	11	14	6	sw.	Miss Lillian Grothaus.	
North Royalton.....	Cuyahoga.....	1,000	20	57.6	— 1.0	84	2†	27	11	33	3.45	— 0.34	0.86	0	6	18	10	3	w.	W. S. Edgerton.	
Norwalk.....	Huron.....	719	27	59.4	— 0.7	87	5	27	11	38	4.16	+ 0.86	1.62	0	10	11	12	8	w.	Giles R. Gregory.	
Oberlin.....	Lorain.....	855	38	58.4	— 0.5	87	3†	28	11	42	2.80	— 0.68	1.05	0	8	18	3	10	ne.	Prof. F. F. Jewett.	
Ottawa.....	Putnam.....	720	20	59.6	— 1.4	85	2†	29	11	37	4.63	+ 1.27	1.25	0	8	18	6	17	sw.	Prof. J. T. Maidlow.	
Sandusky.....	Erie.....	629	36	58.6	— 0.6	86	5	37	11	33	4.69	+ 1.44	1.94	0	11	6	12	13	sw.	U. S. Weather Bureau.	
Tiffin.....	Seneca.....	775	31	59.2	— 0.7	87	5	31	11	34	4.77	+ 0.92	1.24	0	12	15	10	6	n.	Prof. T. H. Sonnedecker.	
Toledo.....	Lucas.....	769	42	58.8	— 0.9	85	2	32	10	34	7.39	+ 4.12	3.57	0	10	12	11	8	sw.	U. S. Weather Bureau.	
Upper Sandusky.....	Wyandot.....	854	30	60.0	— 0.7	87	3	26	11	35	5.43	+ 1.51	2.00	0	9	9	14	8	sw.	Robert E. Tracht.	
Vickery.....	Sandusky.....	588	20	58.4	— 1.3	87	5	26	11	40	7.94	+ 4.49	2.56	0	14	11	8	12	sw.	John W. Barr.	
Wapakoneta.....	Auglaize.....	898	1	60.8	— 0.5	85	5	28	11	36	2.43	— 0.70	0	0	11	11	16	4	nw.	Dr. William Kayser.	
Waauseon.....	Fulton.....	780	41	58.3	— 0.6	86	2	27	11	40	4.95	+ 0.82	2.68	0	14	9	13	9	n.	Thomas Miskell.	
Wickliffe.....	Lake.....	740	1	—	—	—	—	—	—	—	3.00	— 0.76	0	0	9	16	11	4	s.	C. M. Richardson.	
Pennsylvania.																					
Erie.....	Erie.....	658	40	55.8	— 1.5	83	5	36	10	30	2.68	— 0.75	0.91	0	14	9	16	6	w.	U. S. Weather Bureau.	
New York.																					
Adams Center.....	Jefferson.....	540	22	54.4	+ 0.4	91	4	30	11†	34	2.51	— 0.94	0.91	T.	7	17	9	5	w.	A. E. Cooley.	
Angela.....	Allegany.....	1,340	30	52.6	— 2.0	86	4	22	11†	44	2.46	— 1.32	0.91	T.	9	13	13	5	w.	Chas. P. Arnold.	
Appleton.....	Niagara.....	270	22	54.2	— 0.3	87	3	34	8†	36	1.79	— 1.37	0.41	T.	7	13	9	3	nw.	H. A. Van Wagoner.	
Auburn.....	Cayuga.....	715	44	55.7	— 1.0	90	4	29	11	36	3.29	— 0.18	1.40	T.	5	19	9	3	n.	A. H. Underwood.	
Avon.....	Livingston.....	585	18	56.0	— 0.5	88	4	31	11	35	2.52	— 0.12	1.35	T.	7	6	14	11	sw.	W. G. Markham.	
Brockport.....	Monroe.....	537	17	55.3	— 0.9	87	4	26	11	38	2.64	— 0.35	0.97	T.	8	14	9	8	nw.	C. O. Bearman.	
Buffalo.....	Erie.....	767	62	53.7	— 0.8	76	4	32	10	26	2.48	— 0.62	1.24	T.	10	15	7	9	sw.	U. S. Weather Bureau.	
Canton.....	St. Lawrence.....	448	19	52.8	— 3.4	87	4	25	15	34	2.64	— 0.21	1.20	T.	12	10	10	11	sw.	Do.	
Cape Vincent.....	Jefferson.....	246	8	57.8	—	82	4	32	10†	33	3.51	—	2.50	T.	6	20	2	9	n.	Harry Grapotte.	
Chazy.....	Clinton.....	151	13	53.4	— 1.4	85	2	27	15	40	2.36	— 0.62	1.15	T.	8	13	8	10	n.	W. R. North.	
Chestnut Lawn.....	Wyoming.....	1,090	1	55.1	—	87	4	29	10†	39	3.51	—	1.80	T.	10	19	7	5	w.	Chas. Peterson.	
Dannemora.....	Clinton.....	1,490	8	55.0	—	91	3	28	10	39	2.24	—	1.10	T.	8	7	10	14	w.	Dr. W. N. Thayer.	
Elba.....	Genesee.....	500	14	53.7	— 1.4	84	4	27	10†	32	2.16	— 0.89	0	T.	8	23	3	5	e.	Joseph S. Wilford.	
Fayetteville.....	Onondaga.....	530	12	55.4	— 2.9	89	3	25	11	40	2.59	— 0.41	0.72	T.	9	13	12	6	nw.	Dana H. Wells.	
Gabrels.....	Franklin.....	1,729	11	50.5	—	90	5	18	15	46	3.80	—	1.52	T.	12	12	5	14	w.	Gabrels Santarini.	
Geneva.....	Ontario.....	0	56.9	—	91	4	30	11	39	2.68	—	1.09	0	T.	8	21	3	5	w.	Agricultural Exp. Station.	
Harkness.....	Clinton.....	622	11	52.8	— 2.8	85	4	28	15	35	2.09	— 0.32	0.89	T.	9	21	6	4	sw.	J. W. Harkness.	
Hemlock Lake.....	Livingston.....	900	15	55.6	— 0.6	90	3†	25	11	36	3.16	— 0.50	1.94	T.	8	11	14	6	sw.	Bernard P. McGrady.	
Hunt.....	Tompkins.....	1,321	14	56.0	— 1.6	89	4	30	11	40	3.15	— 0.28	1.00	T.	12	18	7	6	nw.	W. S. Barager.	
Ithaca.....	Essex.....	928	35	55.4	— 1.6	89	4	28	12	37	2.85	— 0.08	0.97	T.	7	11	13	7	sw.	U. S. Weather Bureau.	
Keene Valley.....	Cayuga.....	1,000	15	53.0	— 0.2	91	2†	21	15	49	2.62	— 0.56	0.73	T.	15	10	10	11	nw.	Lucius A. Goodyear.	
King Ferry.....	Warren.....	350	16	54.1	— 1.7	90	2	30	13†	39	2.68	— 0.34	0.77	T.	7	11	13	7	sw.	Chas. Forsell.	
Lake George.....	Essex.....	1,864	5	44.7	—	78	5	19	12	39	1.85	—	0.31	T.	14	16	8	7	nw.	Henry van Hoevenberg.	
Lake Placid Club.....	Wyoming.....	1	55.6	—	84	4	28	10†	37	3.57	—	2.00	0	T.	9	21	2	9	w.	James O. Howard.	
Lauterbrunnen.....	Niagara.....	520	26	54.6	— 1.4	85	4	31	11	33	2.65	— 0.19	1.32	T.	0	5	16	9	nw.	Robert N. Clark.	
Lockport.....	Lewis.....	900	46	54.2	— 0.0	89	4	26	11	39	2.38	— 0.51	0.83	T.	9	12	14	5	w.	Prof. W. F. H. Breeze.	
Moira.....	Franklin.....	200	13	52.8	— 2.2	89	4	22	15	41	2.61	— 0.52	0.90	T.	9	9	13	9	w.	C. E. McBride.	
Nehasane.....	Hamilton.....	1,750	5	49.8	—	86	4†	19	15	46	3.54	—	1.15	T.	0	3	13	12	sw.	L. B. Brown.	
North Lake.....	Herkimer.....	1,823	12	50.4	—	84	5	21	12	45	3.75	—	1.03	T.	8	20	2	9	w.	John F. Redmond.	
Ogdensburg.....	St. Lawrence.....	175	29	53.4	— 2.8	83	4	30	10	42	3.51	+ 0.67	1.75	T.	6	12	13	6	se.	State Hospital.	
Old Forge.....	Herkimer.....	1,733	5	50.1	—	86	4	18	12	46	2.60	—	0.92	T.	8	13	6	12	w.	Mrs. S. W. Nelson.	
Oswego.....	Cattaraugus.....	335	43	51.9	— 2.8	82	5	33	10	30	3.37	+ 0.52	1.58	T.	0	10	12	9	10	w.	U. S. Weather Bureau.
Otto.....	Franklin.....	460	9	—	—	—	—	—	—	—	3.59	+ 1.10	1.57	T.	9	12	8	12	nw.	William J. Winke.	
Palermo.....	Schuyler.....	1,038	33	52.8	— 2.5	87	4	25	11†	43	2.69	— 0.55	0.83	T.	13	10	9	12	nw.	W. B. Bartlett.	
Philadelphia.....	Jefferson.....	485	7	54																	

TABLE 2.—*Daily precipitation for May, 1913. District No. 4, Lake Region.*

* Estimated from records of surrounding stations.

TABLE 2.—*Daily precipitation for May, 1913. District No. 4—Continued.*

TABLE 2.—*Daily precipitation for May, 1913. District No. 4—Continued.*

Stations.	Watershed.	Day of month.																														Total			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Ohio—Continued.																																			
Hillhouse.....	Lake Erie.....									.08																									3.06
Hiram.....	do.....									.06																								2.85	
Hudson.....	do.....									T.																								3.31	
Lima 	Maumee.....									T.																								3.41	
Medina.....	Lake Erie.....									.06																								2.83	
Montpelier.....	Maumee.....									T.																								4.56	
Napoleon.....	do.....									.05																								4.19	
New Bremen.....	do.....									T.																								2.26	
North Royalton.....	Lake Erie.....										.05																							3.45	
Norwalk 	do.....										T.																							4.16	
Oberlin.....	do.....										.10																							2.80	
Ottawa.....	Maumee.....									T.																								4.63	
Sandusky.....	Lake Erie.....									.06																								4.69	
Tiffin.....	Sandusky.....									T.																								4.77	
Toledo.....	Maumee.....									.10																								7.39	
Upper Sandusky.....	Sandusky.....									T.																								5.43	
Vickery.....	Lake Erie.....									.09																								7.94	
Wapakoneta.....	Maumee.....									T.																								2.43	
Waunee 	do.....									.10																								4.95	
Wickliffe 	Lake Erie.....									.25																								3.00	
Pennsylvania.																																			
Erie.....	Lake Erie.....									.01																								2.68	
New York.																																			
Adams Center.....	L. Ontario.....									T.																								2.51	
Angelica.....	Genesee.....										.07																							2.46	
Appleton.....	L. Ontario.....										.01																							1.79	
Auburn.....	Oswego.....										T.																							3.29	
Avon.....	Genesee.....										T.																							2.52	
Brockport.....	L. Ontario.....										T.																							01	
Buffalo.....	Lake Erie.....										.02																							2.48	
Canton.....	Grass.....										T.																							2.64	
Cape Vincent.....	St. Lawrence.....										.02																							3.51	
Chazy.....	Champlain.....											.03																						2.36	
Chestnut Lawn.....	Genesee.....											.06																						3.51	
Dannemora.....	Champlain.....											T.																						2.44	
Elba.....	L. Ontario.....											.01																						1.74	
Fayetteville.....	Oswego.....										T.																							2.59	
Gabrels.....	St. Regis.....										T.																							01	
Geneva.....	Oswego.....										T.																							2.64	
Harkness.....	L. Champ'ln.....											.03																						2.09	
Hemlock Lake.....	Genesee.....											T.																						2.16	
Hunt.....	do.....											T.																						3.16	
Ithaca.....	Oswego.....											.13																					3.15		
Keene Valley.....	Ausable.....											.11																					2.62		
King Ferry.....	Oswego.....											T.																						2.85	
Lake George.....	L. Champ'ln.....											T.																						2.68	
Lake Placid Club.....	Ausable, W.B.....											.08																					1.85		
Lauterbrunnen.....	Genesee.....											T.																						3.57	
Lockport.....	L. Ontario.....											.70																					2.65		
Lowville.....	Black.....											T.																						2.38	
Moira.....	St. Lawrence.....											.01																					2.61		
Nehasane.....	Black.....											T.																					3.54		
North Lake.....	do.....											T.																					3.75		
Ogdensburg.....	St. Lawrence.....											T.																					3.51		
Old Forge.....	Black.....											T.																					2.60		
Oswego.....	L. Ontario.....											T.																					3.37		
Otto.....	Lake Erie.....											T.																					08		
Palermo.....	L. Ontario.....											T.																					3.59		
Perry City.....	Oswego.....											.02																					2.69		
Philadelphia.....	St. Lawrence.....											.05																					3.61		
Potdam.....	Raquette.....											.02																					2.78		
Ranger School.....	Oswegatchie.....											.10																					2.49		
Raquette Lake.....	Raquette.....											T.																					3.17		
Rochester.....	Genesee.....											T.																							

TABLE 3.—Maximum and minimum temperatures for May, 1913. District No. 4.

Date.	Duluth, Minn.		Wisconsin.						Chicago, Ill.		Fort Wayne, Ind.		Upper Michigan.								Lower Michigan.							
			Florence.		Green Bay.		Milwaukee.						Escanaba.		Ewen.		Houghton.		Marquette.		Sault Ste. Marie.		Alpena.		Battle Creek.		Cadillac.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	77	45	82	57	83	56	83	57	81	51	61	44	83	56	81	48	87	65	82	41	87	48	81	42	78	52		
2....	45	33	83	53	82	60	83	61	85	62	84	57	63	44	75	40	52	39	73	37	78	44	88	58	85	49	78	55
3....	54	32	75	43	72	64	74	57	81	59	81	62	67	41	70	48	63	38	80	37	79	46	83	64	83	56	75	59
4....	48	38	66	47	64	49	78	60	80	65	82	62	54	45	58	43	56	40	55	39	62	47	82	56	82	60	73	59
5....	62	39	61	49	60	50	68	56	72	53	83	63	61	45	61	47	59	40	62	43	67	40	77	52	75	65	72	57
6....	58	32	58	38	60	41	59	45	61	48	66	50	54	35	52	31	46	31	49	31	45	32	61	37	68	52	59	43
7....	51	32	60	27	58	36	48	40	55	45	62	43	44	30	58	25	54	31	47	29	47	32	64	37	59	30	50	41
8....	52	31	57	42	63	43	68	49	70	42	52	33	61	35	47	32	48	32	44	35	50	38	64	40	54	41	54	
9....	54	29	56	25	47	35	50	36	50	40	60	41	43	29	60	20	45	30	38	30	35	31	42	31	59	43	49	28
10....	51	36	59	26	53	31	47	34	45	38	52	33	50	30	58	28	54	31	51	32	45	31	51	28	55	29	52	24
11....	57	36	64	29	59	36	50	37	52	41	62	34	51	36	65	41	61	33	67	36	58	28	53	31	63	31	62	29
12....	69	48	64	42	69	44	69	43	74	48	69	40	64	44	63	39	62	42	67	44	55	38	62	41	69	40	59	40
13....	50	34	59	37	55	44	62	41	68	48	77	53	52	36	56	30	48	35	47	34	43	36	59	38	74	49	60	44
14....	35	31	56	31	48	40	48	38	57	46	61	50	50	34	52	30	38	33	38	33	34	35	60	50	57	31	51	
15....	42	31	49	36	70	42	75	42	79	50	82	49	44	39	49	37	43	35	44	35	46	38	80	47	59	39	59	
16....	53	38	69	39	64	44	56	46	59	50	65	49	52	40	68	39	61	39	50	42	57	40	59	41	66	49	71	42
17....	59	40	59	47	64	45	71	52	71	55	77	47	62	44	57	35	55	38	61	45	57	41	68	43	72	46	65	51
18....	54	34	55	37	59	44	63	49	60	52	65	50	57	39	52	40	49	38	52	40	45	36	59	39	63	49	56	43
19....	48	34	59	30	54	41	53	43	56	46	67	46	53	35	56	26	50	35	43	38	45	35	60	33	65	41	59	33
20....	41	35	55	36	47	42	52	41	62	48	71	51	51	41	48	31	48	36	47	35	56	32	52	36	62	51	50	40
21....	42	35	48	40	54	46	69	47	76	55	78	54	47	41	48	37	42	38	44	37	51	45	47	42	75	50	60	44
22....	57	42	49	39	52	46	55	47	57	50	63	51	47	44	54	38	55	38	48	37	50	45	50	43	53	51	58	45
23....	66	44	67	42	64	45	60	46	75	56	82	54	66	48	62	44	68	31	65	40	56	44	57	47	57	42	62	
24....	54	33	61	35	62	41	74	39	72	46	70	42	57	35	57	33	48	31	56	34	63	35	66	41	64	40	54	
25....	38	32	61	30	50	38	46	38	46	41	70	53	49	32	46	27	50	28	37	32	53	29	46	35	55	47	60	
Mns..	55.2	37.1	62.8°	38.0°	61.8	45.0	62.3	46.0	65.2	50.1	70.4	49.4	55.1	39.8	62.0	36.9	55.7	37.3	56.3	38.9	57.6	37.2	60.5	41.4	68.1	46.5	63.1	42.5

Date.	Lower Michigan.						Ohio.						Erie, Pa.						New York.						Vermont.				
	Detroit.		Muskegon.		Saginaw, West Side.		Cleveland.		Lima. §§		Sandusky.		Toledo.		Buffalo.		Canton.		Rochester.		Syracuse.		Burlington.		Northfield.				
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1....	79	49	74	51	81	52	74	46	79	38	80	49	80	51	70	47	61	42	67	40	73	45	74	44	66	34	68	27	
2....	84	59	77	56	85	56	81	62	84	48	85	57	85	58	75	61	67	50	79	54	82	57	80	61	61	76	56	83	47
3....	83	64	75	63	83	59	85	63	83	55	85	62	84	64	82	61	75	66	84	57	86	59	85	61	76	56	83	47	
4....	84	62	75	58	82	62	84	63	82	58	85	62	83	63	82	65	76	68	87	60	85	62	88	57	84	56	75	49	
5....	82	62	70	56	77	61	86	64	84	60	86	63	83	64	83	63	76	70	85	60	86	62	86	64	79	59	85	49	
6....	68	43	60	48	66	40	70	51	68	58	70	49	69	46	73	52	73	47	77	52	76	49	78	54	80	59	84	47	
7....	58	39	57	38	58	33	54	43	63	43	56	44	59	40	54	39	76	45	73	42	71	48	68	33	59	39	70	46	
8....	65	41	56	49	62	43	58	42	71	37	59	44	67	43	55	40	58	38	59	31	62	36	55	34	59	26	64		
9....	57	33	51	40	50	33	56	40	59	46	58	39	58	38	52	39	50	34	54	37	53	35	53	38	57	40	56		
10....	53	34	50	33	55	29	44	38	53	34	58	48	48	38	50	32	46	36	42	30	44	34	41	32	40	31	51		
11....	55	39	57	30	60	36	49	43	60	28	53	37	55	39	48	38	50	33	53	28	52	34	48	32	52	33	49	30	
12....	62	41	58	44	63	40	64	37	70	35	66	38	67	40	57	37	53	40	63	29	61	36	59	37	58	25	62		
13....	74	49	64	48	67	47	66	56	78	49	71	53	76	50	62	53	58	45	68	46	77	45	77	49	70	49	82		
14....	60	45	61	46	61	44	56	51	78	53	56	49	57	47	56	45	58	45	54	33	55	42	56	43	55	40	51		
15....	76	45	76	45	74	45	79	52	81	53	82	49	81	47	71	40	65</td												